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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,898	06/24/2003	Douglas Boyes	1492/2	4766

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EXAMINER	
BAUM, STUART F	

ART UNIT	PAPER NUMBER
1638	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/602,898	BOYES ET AL.	
	Examiner	Art Unit	
	Stuart F. Baum	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-50* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-13, 24-28 drawn to a method for altering a plant agronomic trait comprising introducing into a plant cell an expression cassette comprising a nucleotide sequence selected from the group consisting of: an nucleotide sequence antisense to a AGB1, a nucleotide sequence comprising an inverted repeat of AGB1, and a nucleotide sequence encoding a dsRNA of AGB1; said sequence operably linked to a promoter, or said AGB1 sequence set forth in SEQ ID NO:1, or transgenic plant comprising said nucleotide sequence, classified in class 800, subclass 298 for example.

II. Claims 1-13, drawn to a method for altering a plant agronomic trait comprising introducing into a plant cell an expression cassette comprising a nucleotide sequence that is AGB1in sense orientation; said sequence operably linked to a promoter, or said AGB1 sequence set forth in SEQ ID NO:1, classified in class 800, subclass 290 for example.

III. Claims 1-13, and 29-34 drawn to drawn to a method for altering a plant agronomic trait comprising introducing into a plant cell an expression cassette comprising a nucleotide sequence that is a GPA1 sequence; said sequence operably linked to a promoter, or said GPA1 sequence set forth in SEQ ID NO:3,

and transgenic plant comprising said nucleotide sequence classified in class 800, subclass 278 for example.

IV. Claims 14-18, drawn to a method for altering a plant agronomic trait comprising causing a disruption in an AGB1 gene, classified in class 800, subclass 285 for example.

V. Claims 19-23, drawn to a method for altering a plant agronomic trait comprising causing a disruption in an GPA1 gene, classified in class 800, subclass 286 for example.

VI. Claims 29-34 drawn to transgenic plant having stably integrated into its genome an expression cassette comprising a nucleotide sequence selected from the group consisting of: an nucleotide sequence antisense to a GPA1, a nucleotide sequence comprising an inverted repeat of GPA1, and a nucleotide sequence encoding a dsRNA of GPA1, classified in class 800, subclass 298 for example.

VII. Claims 35-50, drawn to a method for producing a transgenic plant or a transgenic plant, having increased root biomass comprising a driver cassette comprising a synthetic chimeric transcription factor open reading frame operably linked to a root-preferred promoter and a target cassette comprising a nucleotide sequence in the antisense orientation, wherein the nucleotide sequence comprises a portion of an AGB1 gene or a portion of a AGB1 gene of SEQ ID NO:1, classified in class 800, subclass 287 for example.

Claims 1-13 are generic to Groups I, II and III and will be examined to the extent that they are drawn to the elected invention.

Claims 29-34 are generic to Groups III and VI and will be examined to the extent that they are drawn to the elected invention.

2. The inventions are distinct, each from the other because of the following reasons:

3. Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are distinct one from the other because the starting materials and method steps are distinct one from the other. Examples of divergent starting materials are the antisense AGB1 nucleic acid molecules of Group I and the AGB1 nucleic acid molecules of Group II. Group I and Group II utilize different method steps. It is recognized in the art, that nucleic acid molecules in antisense orientation are used to down-regulate the expression or reduce the activity of a specific protein whereas over-expressing a nucleic acid molecule in sense orientation is used to upregulate or increase the activity of a specific protein. The two different sequences, i.e., antisense and sense, are distinct one from the other in structure and function, and utilize different mechanisms. Therefore, each one requires a separate search and examination that is unique to nucleic acid molecules operably linked to promoters in either sense or antisense orientation.

4. Inventions I-II and Invention III are unrelated to each other. Applicant is reminded that nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another, as are different proteins structurally distinct chemical compounds and unrelated to one another. These sequences are thus deemed to normally constitute **independent and distinct** inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, each such sequence is presumed to represent an independent and

distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.141 et seq (see MPEP 803.04 and 2434). This requirement is not to be construed as a requirement for an election of species, since each nucleotide and amino acid sequence is not a member of a single genus of invention, but constitutes an independent and patentably distinct invention.

5. Invention IV and Invention V are unrelated to each other. Applicant is reminded that nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another, as are different proteins structurally distinct chemical compounds and unrelated to one another. These sequences are thus deemed to normally constitute **independent and distinct** inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, each such sequence is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.141 et seq (see MPEP 803.04 and 2434). This requirement is not to be construed as a requirement for an election of species, since each nucleotide and amino acid sequence is not a member of a single genus of invention, but constitutes an independent and patentably distinct invention.

6. Inventions I-III, VI-VII and Inventions IV-V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are distinct one from the other because the starting materials and method steps are distinct. Examples of divergent method steps are mutagenizing endogenous nucleic acid molecules of Groups IV or V using either chemical, ultraviolet or

transposons. Said mutagenizing steps of Groups IV or V require a separate search of the literature which would not be encompassed by the literature search for any of Groups I-III.

7. Inventions I-II, and VII and invention VI are unrelated to each other. Applicant is reminded that nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another, as are different proteins structurally distinct chemical compounds and unrelated to one another. The claims are not drawn to nucleic acid products but they utilize different nucleic acid molecules encoding distinct proteins. Therefore the inventions utilizing these sequences are **independent and distinct** inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, each such sequence is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.141 et seq (see MPEP 803.04 and 2434).

8. Inventions III and VI are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the method for altering a plant agronomic trait of Group III produces a plant with a GPA1 nucleic acid sequence in sense orientation whereas the transgenic plant of Group VI is made using a GPA1 nucleic acid molecule in antisense orientation or an inverted repeat of GPA1, or a nucleotide sequence encoding a dsRNA of GPA1.

9. Because these inventions are distinct for the reasons given above, have acquired a separate status in the art as shown by their different classification, and the literature and sequence

searches required for each of the Groups are not required for another of the Groups, restriction for examination purposes as indicated is proper.

10. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

11. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart F. Baum whose telephone number is 571-272-0792. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on 571-272-0804. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

Stuart F. Baum Ph.D.
Patent Examiner
Art Unit 1638
June 20, 2005